

RD/DISASTER 'RISK' AND 'VULNERABILITY'



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RISK AND VULNERABILITY?

Risk

- UNDP defines risk as *“the probability of harmful consequences- casualties, damaged property, lost livelihoods, disrupted economic activity, and damage to the environment- resulting from interactions between natural or human-induced hazards and vulnerable conditions”*.

Vulnerability

- *Vulnerability can be defined as “the extent to which a community, structure, service, or geographic area is likely to be damaged or disrupted by the impact of particular hazard, on account of their nature, construction and proximity to hazardous terrain or a disaster prone area”*.



KEY CONCEPTS IN RISK AND VULNERABILITY ANALYSIS

- **Risk** = the possibility of loss, injury, death or other consequence
- **Vulnerability** = susceptibility to damage or harm by a hazard
- **Exposure** = duration and/or extent of a hazard
- **Manageability** = the capacity to respond to Needs created by a Disaster

DIFFERENT RISK CONNOTATIONS

- According to common connotation disaster risk is defined as:

(H) hazard x vulnerability (V)

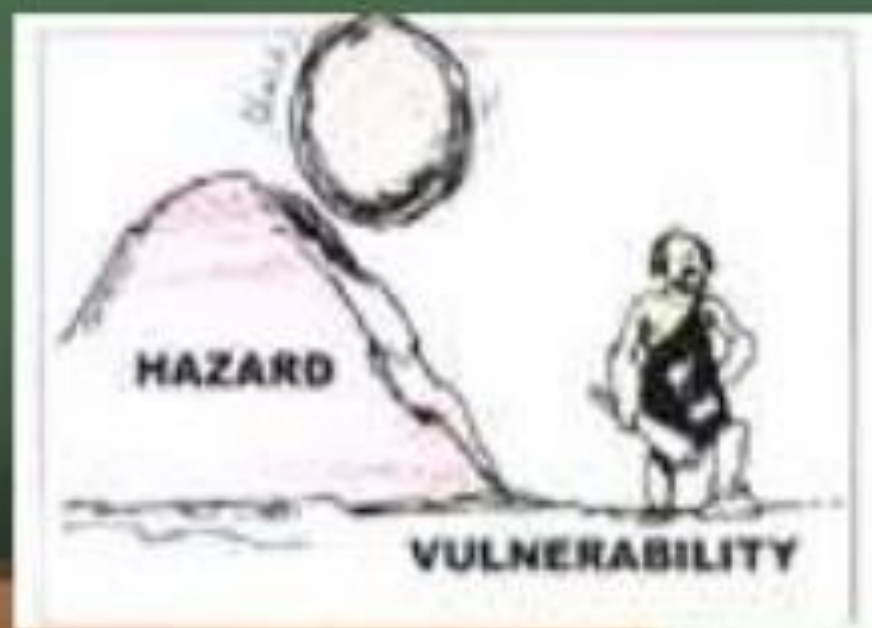
Or

- According to engineers and technocrats, disaster risk becomes the product of the following:

(P) probability (of occurrence of a hazard) x (C) consequences (of a hazard)

or

$P \times C$



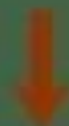


Hazard

X



Vulnerability



=

Disaster Risk



Capacity



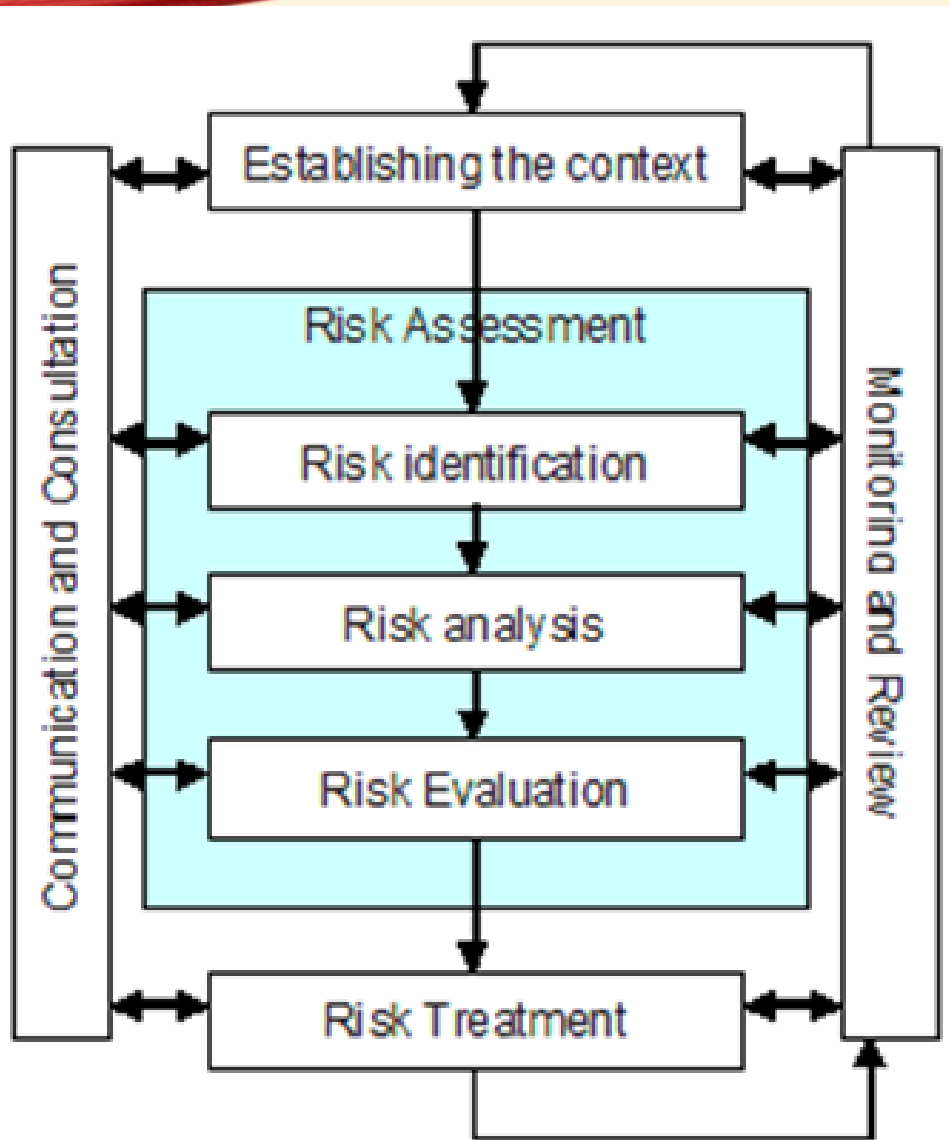
TYPOLOGY OF VULNERABILITY

- **Physical Vulnerability** relates to the physical location of people, their proximity to the hazard zone and standards of safety maintained to counter the effects. **For example**, people are only vulnerable to a flood because they live in a flood-prone area.



- Disparate capacities of people are exposed during disasters, which explains differential vulnerability/losses, which are explained in disaster literature as **socio-economic vulnerabilities**.

RISK MANAGEMENT



Risk Assessment

- **For UNDP, a comprehensive risk assessment consists of the following steps:**
- **Step 1:** Understanding of current situation, needs and gaps
- **Step 2:** Hazard assessment
- **Step 3:** Exposure assessment
- **Step 4:** Vulnerability analysis
- **Step 5:** Loss/impact analysis
- **Step 6:** Risk profiling and evaluation
- **Step 7:** Formulation or revision of DRR strategies and action plans

VULNERABILITY ASSESSMENT

Hazards

- Fire
- Explosion
- Natural hazards
- Hazardous materials spill or release
- Terrorism
- Workplace violence
- Pandemic disease
- Utility outage
- Mechanical breakdown
- Supplier failure
- Cyber attack

Probability
& Magnitude

Assets at Risk

- People
- Property including buildings, critical infrastructure
- Supply chain
- Systems/equipment
- Information Technology
- Business operations
- Reputation of or confidence in entity
- Regulatory and contractual obligations
- Environment

Vulnerability

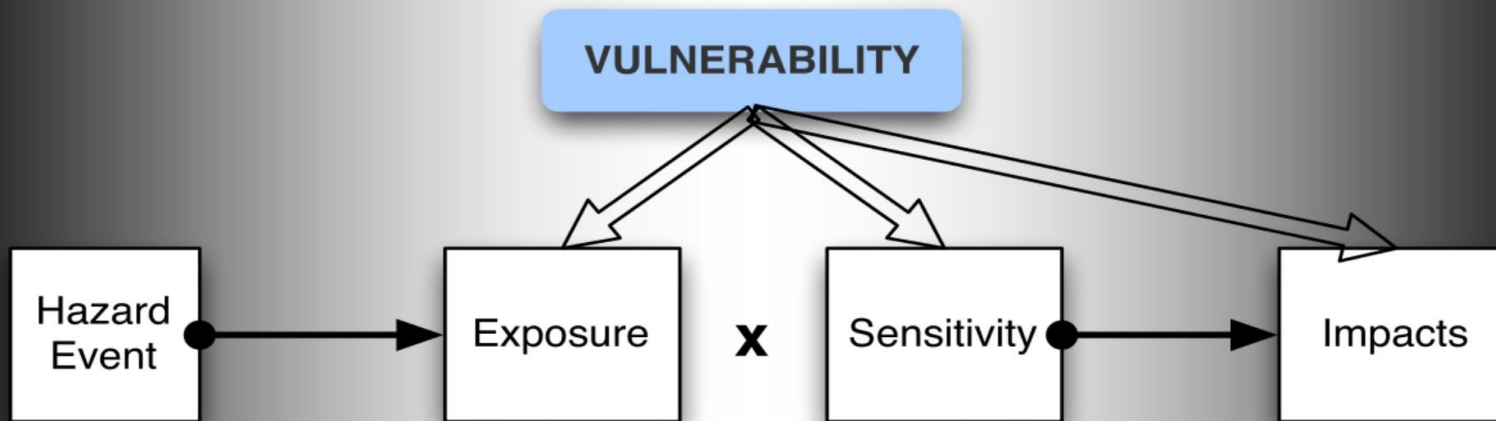
Impacts

- Casualties
- Property damage
- Business interruption
- Loss of customers
- Financial loss
- Environmental contamination
- Loss of confidence in the organization
- Fines and penalties
- Lawsuits

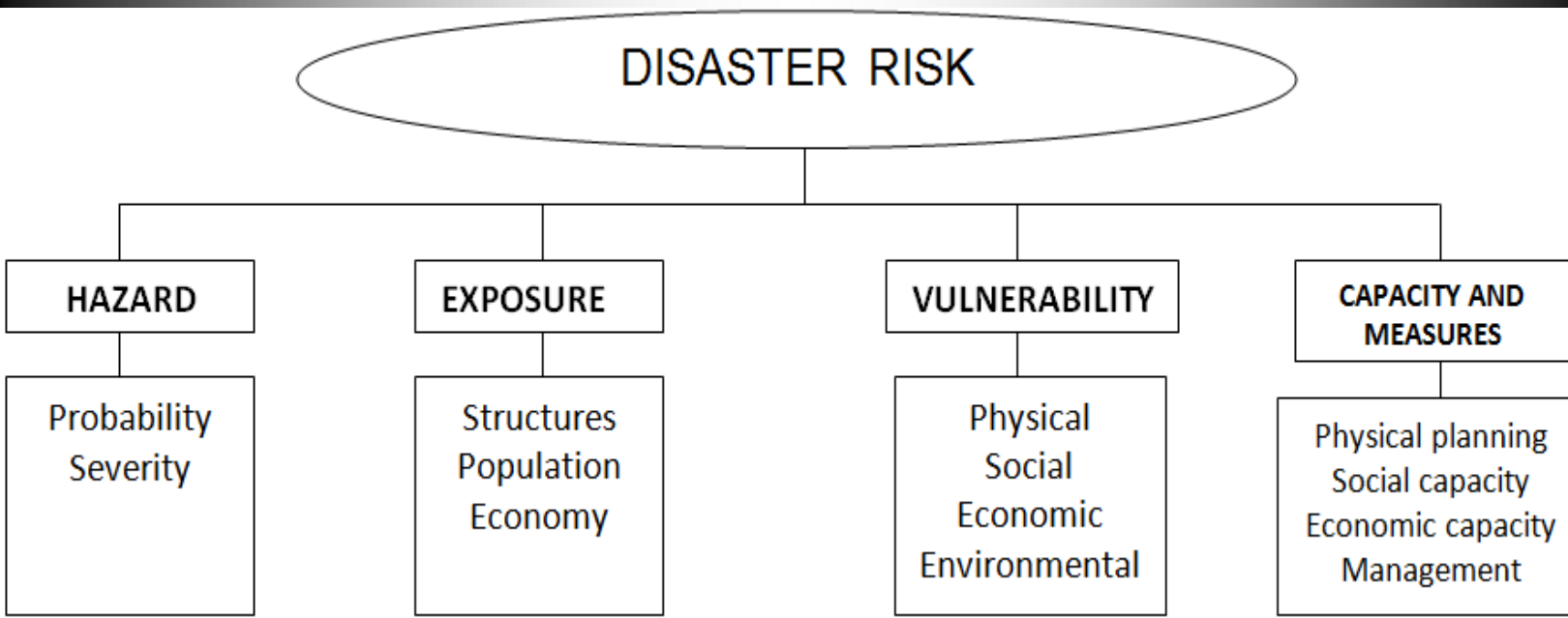
Hazard Identification

Vulnerability Assessment

Impact Analysis



- *Potential risks may not be obvious and may not have occurred in the past. It is vital to seek to identify what could occur as well as the consequences.*



- *Risks can never be eliminated but they can be managed and their consequences reduced, at a cost.*



Thank You